
Federal Reserve System Century Date Change Project

Procedures to Manage the Risks Posed by Changes to Information Systems in 1999 and First Quarter 2000

Version 1.2

October 1998

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I. Introduction

The procedures outlined in this document are for managing the risks associated with making changes to Federal Reserve information systems in 1999 and the first quarter of 2000.¹ They were developed by the Automation Resource Managers (ARM) and have been reviewed by the Information Technology (IT) and the Century Date Change (CDC) Councils.² The goal of the Federal Reserve System is to complete renovation, testing, and certification of its critical information systems by year-end 1998.³ Subsequent changes to Federal Reserve policies, rules, regulations, and services that generate changes to these critical information systems create the risk that systems may no longer be CDC compliant.⁴ The risks associated with modifying a system will depend on the timing, scope, type, and complexity of the proposed changes.⁵

II. Change-Management Procedures

A. Scope of the Procedures

The change-management procedures apply to the systems that fall within the scope of the Federal Reserve's Systemwide CDC Project Office. Changes will be made to information systems in 1999 for a variety of reasons including (1) to support changes to business processes, (2) to make systems Year 2000 compliant, (3) to modernize systems, (4) to make emergency fixes to systems that have failed, and (5) to support routine maintenance. The CDC change-management procedures augment the existing change-management procedures employed by the Federal Reserve System. The CDC test procedures that have been previously published define Year 2000 testing and internal certification criteria.

The CDC change-management procedures do not address specific change scenarios but rather establish a general framework to evaluate risk associated with making changes to information systems.

The decision whether to implement a change must balance the following:

- An assessment of the risk associated with failing to support a change to a critical business process and the business benefit derived from implementing a proposed change
- An assessment of the operational risk introduced by a proposed change, including the impact on depository institutions, third party servicers, Treasury, and so forth.

B. Timing of Changes

Generally, the closer to January 1, 2000, that a change is made, the greater the risk because less time remains to test and observe a modified system in production. To manage risk, new systems proposed for implementation in the third and fourth quarters of 1999 and the first quarter of 2000 must be approved according to the procedures outlined in this document. Within this window, there is a moratorium on implementing modified systems between October 1, 1999, and March 31, 2000. The morato-

rium generally does not apply to routine maintenance activities (see endnote 1). The process outlined in this document of dealing with exceptions will allow critical changes to be made and implemented in production systems during the moratorium. This process allows fixes and product changes to be made in an emergency situation after they have been approved by the Product Manager.⁶ Planned changes that are critical to the operation of a business may also be made if approved. Rollouts for new systems that have been tested and certified by the end of March 1999 may continue through the third quarter (for example, the conversion to the Federal Reserve System “desktop” standard, the rollout of Fedline for Windows, or the implementation of the check adjustment system.). Whether rollouts and conversions will continue in the fourth quarter will be determined in mid-1999.⁷ Implementation of Year 2000 compliant versions of vendor products may be carried out during the moratorium, but it must be approved.⁸ In early March 2000, the benefits of continuing the moratorium through month-end will be reviewed, and if it is deemed appropriate, the moratorium will be lifted. The change-management rules and approval processes are summarized in table 1 (page 5).

The Federal Financial Institutions Examination Council (FFIEC) has published an interagency statement, *Guidance Concerning Testing for Year 2000 Readiness*, which includes milestones for testing mission-critical systems. It states that by December 31, 1998, “testing of internal mission-critical systems should be substantially complete” and by June 30, 1999, “testing of mission-critical systems should be complete.” Modifications to systems after December 1998 that involve changes to dataflows between the Federal Reserve and depository institutions must be carefully evaluated to determine the impact on the institutions. Depending upon the type of change, institutions may need to retest critical systems with the Federal Reserve in order to recertify these systems for Year 2000 compliance.

C. Assessing the Impact of Changes

To assess the impact of changes planned during the limitation window, the Product and Support Offices will be surveyed during September and October 1998. The goal of the survey is to identify significant changes planned for critical applications in 1999 and the first quarter 2000.⁹ Information on implementation plans for new systems that are tracked by the national CDC program will also be collected. To minimize burden, summary information will be collected, and additional, detailed data will be requested only if necessary. An update to the survey data will be made in March 1999. The survey data will be analyzed by the CDC Project Office to determine whether proposed changes create unmanageable risk or workload. A summary of the results will be forwarded to the CDC and IT Councils and the ARM.

Changes that are proposed following the March 1999 survey will require a written impact assessment from the business owner (for example, Product and Function Offices). The assessment will be forwarded to the CDC Project Office, and the request will be analyzed and approved or disapproved as described in the following section.

D. Reviewing and Approving Proposed Changes

Business owners will provide information regarding the benefits and risks associated with implementing significant changes to production systems during the moratorium. When performing the analysis, owners will carefully assess the impact of changes on other entities both inside and outside the Federal Reserve System.

The CDC Project Office will focus its assessments on the extent to which the business analysis documented in the surveys has adequately identified risks in the broader context (for example, the risks

associated with multiple changes occurring simultaneously). The Project Office may ask cross-functional groups, such as the Financial Services Operations Council or the IT Council, to consider issues raised by its review.

The Project Office through the CDC Project Manager will communicate any concerns to the business owners in a timely manner. If material differences cannot be resolved, the business owners will seek review by the CDC Council, and if necessary the Council will arbitrate the decisionmaking process.

E. Applicability of the Change-Management Procedures to Local Systems

The Board and the Reserve Banks will implement procedures for managing change to “district components,” including district-unique systems, local-area networks, “desktop applications,” systems “embedded” in elevators and building control facilities, market data systems, and so forth.¹⁰ Problems that arise from changes to local systems that support delivery of services to institutions may spill over to national systems or degrade a national service. The ARM will implement local procedures by November 1998. The national CDC change-management procedures will serve as a guideline for developing local Year 2000 change-management procedures.

F. Clarification of and Extensions to the National Change-Management Procedures

The change-management procedures provide a broad framework for assessing change. As decisions regarding specific scenarios are made, information will be posted to a Frequently Asked Questions (FAQ) database on the CDC project-tracking tool. This posting will make information regarding specific cases available throughout the Federal Reserve System.

G. Managing the Backlog

A backlog of business initiatives and demand for information systems will be created as a result of the moratorium. In the second half of 1999 a plan will be developed to set priorities to manage the implementation of new and modified systems beginning in April 2000.

III. Managing Internal and External Factors that Create Change

Proposals for changes to Federal Reserve policies, rules, regulations, and services that create changes to mission-critical systems operated by the Federal Reserve, depository institutions, third-party servicers, or Treasury will identify CDC risks posed by the changes.¹¹ The Board and the Reserve Banks will consider the risks in their decisionmaking processes.

The change-management rules will be broadcast to institutions that direct or influence the Federal Reserve’s responsibilities and services. Organizations will be educated about the Federal Reserve’s program to manage the risks posed by change and will be asked to consider the risks in their decisionmaking process as well. Institutions that have traditionally generated policy and business changes include

- Congressional and executive branches of the U.S. government¹²
- U.S. Department of Treasury, Securities and Exchange Commission and the Federal Trade Commission
- National Automated Clearing House Association and other industry trade groups
- Financial Accounting Standards Board and American Institute of Certified Public Accountants

- Federal Financial Institution Examination Council
- The Bank for International Settlements.

In addition, the Board will review its regulations and the Reserve Banks and the Board will review the Districts' operating circulars and other policies to determine whether modifications are warranted (for example, changes to provisions regarding merger transition accounting). The goal is to carefully manage changes that impact the operations and information systems of depository institutions.

IV. Maintaining the Change-Management Procedures

Proposed revisions to the change-management procedures should be submitted to the Project Office. Revisions will be reviewed by the ARM and the IT Council and, when appropriate, forwarded to the CDC Council for approval.

Table 1

Change-Management Rules

			— — — Moratorium — — — — —		
			— — — — — Limitation Window — — — — —		
	1 st Qtr. 1999	2 nd Qtr. 1999	3 rd Qtr. 1999	4 th Qtr. 1999	1 st Qtr. 2000
Change Actions¹	All changes may be made.	Discretionary changes should be postponed to second quarter 2000.	Discretionary changes should be postponed to second quarter 2000.	Discretionary changes should be postponed to second quarter 2000.	Discretionary changes should be postponed to second quarter 2000.
			Changes to existing systems (internal or vendor supplied) may be implemented. This includes CDC compliant versions of vendor products.	No changes should be implemented unless critical to a business and approved.	No changes unless critical to a business and approved.
		Changes including implementation of new systems may be made.	Rollout of new systems implemented prior to third quarter may continue.	CDC compliant versions of vendors products may be implemented if approved.	CDC compliant versions of vendors products may be implemented if approved.
		Emergency fixes to existing systems may be made.	Emergency fixes to existing systems may be made.	After Dec. 19 emergency fixes must be approved per procedure. ²	After Jan. 15 emergency fixes to existing systems may be made.
Approval Required	No approval required.	No approval required.	Changes to existing systems do not require approval.	All changes proposed require a joint review by the business owner and the CDC Project Office with approval by the business owner.	All changes proposed require a joint review by the business owner and the CDC Project Office with approval by the business owner.
			New systems proposed for implementation require a joint review by the business owner and CDC Project Office with approval by the business owner.	Implementation of CDC compliant vendors products require a joint review by the business owner and CDC Project Office with approval by the owner.	Implementation of CDC compliant vendors products require a joint review by the business owner and CDC Project Office with approval by the owner.
			Emergency fixes may be authorized by product offices.	Emergency fixes may be authorized by product offices through Dec. 19. The CDC Project Office should be notified as soon as possible but no later than two business days following the fixes. ²	Emergency fixes between Jan. 1 and Jan. 15 may be approved per severity-one procedure. After Jan. 15 emergency fixes may be authorized by the Product Office. The CDC Project Office must be notified of changes as soon as possible but no later than two business days. ²
				Routine maintenance must receive prior approval starting Dec. 19. ¹	After Jan. 15 routine maintenance may be performed without prior approval. ¹

¹ Change actions include maintenance; enhancements; and the introduction of new or upgraded hardware, environmental systems, and applications software. Routine maintenance except in the period noted above (Dec. 19, 1999 - Jan. 15, 2000) is exempt from the change-management procedures (see endnote 1).

² See endnote 6.

Endnotes

¹ The term “information systems,” as used in this document, includes the components of the Federal Reserve’s information technology infrastructure (for example, FedNet, mainframes, check-processing systems, currency sorters, distributed computing facilities, and networks) as well as applications software and systems “embedded” in elevators, building control systems, and so forth. It also includes software developed by the Federal Reserve, vendor-supplied computer hardware and software, network facilities, and data stores such as files and databases.

Changes to information systems include maintenance, enhancement, and the introduction of new or upgraded hardware, environmental systems, or applications software. Routine maintenance is necessary to provide day-to-day service to customers and generally represents low risk to continuity of operations because activities are well controlled and regularly performed by employees. Routine maintenance is exempt from the CDC change-management procedures with the exception of the four-week period beginning December 19, 1999, and ending January 15, 2000. During this period, routine maintenance should be deferred if possible, but if it cannot be deferred, the appropriate Product Office should be notified in advance. Because routine maintenance and emergency fixes may on occasion have a collateral impact on other systems, a central source of information on change to components tracked under the national CDC project and problems involving common distributed computing facilities will be a useful tool. The CDC Project Office will serve as a clearing house for this information. Routine maintenance includes applying patches to operating systems; performing IMS, VTAM, and NCP gens; managing libraries and storage resources; adding capacity to hardware; making “adds, changes and deletes” to terminal address tables; implementing changes to Job Control Language, spreadsheet cells, payroll tax tables, sort patterns, security authorization tables, and so forth.

² Task Force: Steve Malphrus, Chair, Israel Sendrovic, and Elaine Geller.

³ Certifying a system for CDC readiness is the process of ensuring that date-dependent functions have been tested to work within, across, and into the next century. Certification includes testing data exchanges and interfaces to other Federal Reserve systems and to external systems and testing to ensure that CDC changes have not propagated errors in other systems’ logic. Certification requires that a “business owner” acknowledge that testing has met CDC criteria. Certification of a system for CDC readiness is an internal process and is not a representation or a warranty by the Federal Reserve.

⁴ Nonroutine maintenance to mainframe environments planned for implementation during the moratorium period will be discussed in advance with the CDC Project Office. The change-management procedures apply to both production and production test environments (including Year 2000 test environments). Maintaining synchronization, to the extent possible, among environments that have been certified for Year 2000 compliance is important. Computer environments devoted to systems development are not subject to the CDC change-management procedures.

⁵ Unless properly tested, changes to information systems increase the probability that a system will fail, produce inaccurate results, or corrupt databases. The scope, complexity, timing, and type of change determines, in large part, the risk associated with making the change. For example, making a change to the Integrated Accounting System in support of an internal Federal Reserve process will introduce less risk than modifying Fedline to accommodate a NACHA rule change. Similarly, making changes to date field formats or to date-processing logic entails more risk than making changes to a print routine.

⁶ For the four-week period beginning on December 19, 1999, and ending on January 15, 2000 decisions regarding actions to take for severity-one emergencies involving critical systems will be made by FRAS and the appropriate CBAF, with the involvement of product managers to the extent practicable. Emergency fixes should be reported as soon as possible, but no later than two business days following the fix, to the CDC Project Office.

⁷ Fedline for Windows will be implemented at the discretion of depository institutions. Smaller institutions may want to implement the product during the latter half of 1999 since they often operate Fedline as a standalone system (that is, without interfaces to other information systems that would have to be linked and then retested).

⁸ During the moratorium, new releases of vendor products that are intended to fix Year 2000 problems should be analyzed carefully to determine if the functionality that has been repaired is used by the Federal Reserve System. If the modified functionality is not used, then implementation of the release should be considered for deferral. Implementation of CDC compliant vendor products during the moratorium requires a joint review by the business owner and the CDC Project Office with approval by the owner. In the case of environmental systems and some commercial off-the-shelf software, the owner will be an Automation Resource Manager.

⁹ What qualifies as a “significant change” will be defined when the surveys are developed. The CDC Project Office

will work with the IT Council and ARM to draft surveys for the 1998 and 1999 data collections. The IT Council and ARM will also provide resources if requested to assist the Project Office in the analysis of survey data and the development of the report.

¹⁰ The CDC Project Office reviews only changes to the systems identified in attachment 1 and the Reserve Banks and the Board will review changes to local applications. In July 1998, the CDC Testing Synergies Team published a paper entitled “Recommended Guidelines for Limiting Changes in the Distributed Computing Environment.” The paper provides detailed guidelines for managing changes to distributed computing systems, and the guidelines will be modified if necessary to be consistent with the CDC change rules. Guidelines developed in the future for other technologies or classes of applications should be guided by CDC change-management procedures as well.

¹¹ Depository institutions are currently faced with a number of mandatory changes that affect their information systems, such as the introduction of the euro and implementation of NACHA EDI requirements. Implementation of other products, such as the Fedline for Windows and the Federal Reserve’s enhanced net settlement service, are discretionary. Decisions on conversion schedules to implement these products are made by institutions.

¹² John Koskinen, Adviser to the President and Chair of the President’s Council on Year 2000 Conversion, was instrumental recently in deferring legislation that would have created a large number of changes to Internal Revenue Service information systems. He is committed to working with the executive and congressional branches to minimize statutory changes that create operational risk.